

## WHAT IS CLAIMED IS:

1. A semiconductor device fabricating method comprising the steps of:

5 carrying a plurality of wafers each having a plurality of chips into a die bonder and placing said plurality of wafers in said die bonder;

10 bonding together a plurality of chips, which is taken out from said plurality of wafers respectively and superposed in a stack, by each bonding layer to form a chip assembly; and

bonding said chip assembly to a die pad by another bonding layer.

15 2. The semiconductor device fabricating method according to claim 1 further comprising the step of stacking one or a plurality of chips on said chip assembly.

20 3. The semiconductor device fabricating method according to claim 1 further comprising the step of stacking one or a plurality of chips on a back surface opposite a surface of said die pad to which said chip assembly is bonded.

25 4. The semiconductor device fabricating method according to claim 1, wherein said die bonder includes a preparatory stage having a support surface on which the chip is placed, and said support surface inhibits the adhesion of said bonding layer to said support surface.

30

5. A semiconductor device fabricated by the semiconductor device fabricating method according to claim

1.

6. A semiconductor device fabricating apparatus comprising:

5 a plurality of wafer holders for holding a plurality of wafers, respectively;

a chip conveying device for conveying one chip from each of said plurality of wafers held by said plurality of wafer holders;

10 a preparatory stage having a support surface on which chips conveyed from said plurality of wafers by said chip conveying device are stacked up and are bonded together by bonding layers to form a chip assembly;

15 a chip assembly conveying device for conveying said chip assembly from said preparatory stage onto a die pad; and

a stage on which said chip assembly is bonded to said die pad by a bonding layer.

20 7. The semiconductor device fabricating apparatus according to claim 6, wherein said support surface of said preparatory stage inhibits the adhesion of said bonding layer to said support surface.